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**ANGLO-CHINESE SCHOOL (JUNIOR)
ANGLO-CHINESE SCHOOL (PRIMARY)**

PSLE PRELIMINARY EXAMINATION 2005

SCIENCE

BOOKLET A

NAME : _____ () **CLASS** : P6. _____

DATE : 25th August 2005

Total Time For Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

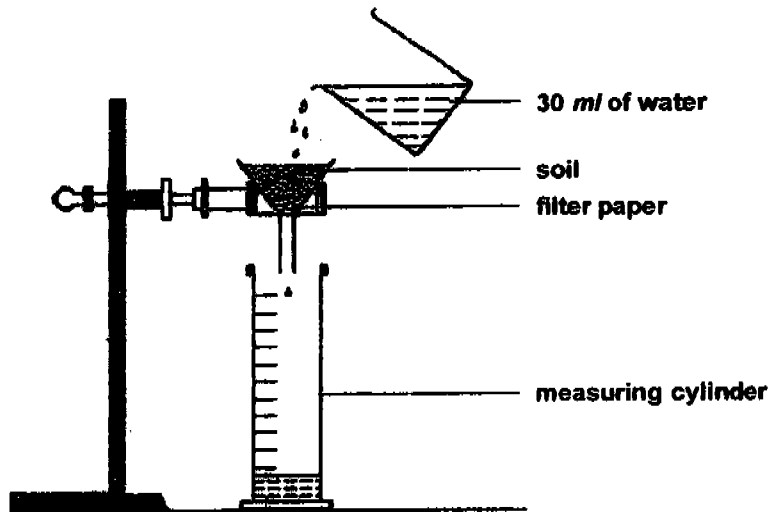
Answer all questions.

PART I

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(30 x 2 marks)

- 1 Porous soil allows water to flow through it quickly. Batisa was told that mangrove plants grow best in soil that is not porous. He prepared the set up below and tested 4 types of soil, A, B, C and D. Each time he poured 30ml of water into the soil.



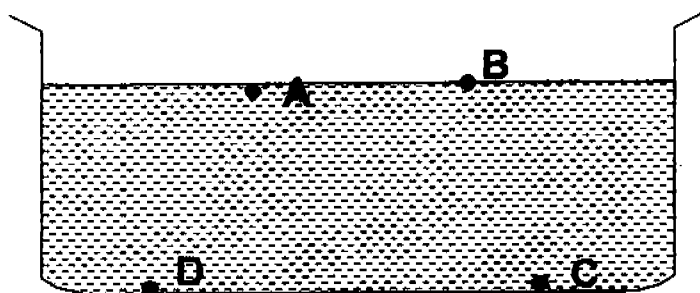
After 20 minutes, he observed the amount of water collected in the measuring cylinder for each type of soil and recorded it in the table below.

Type of soil	Amount of water collected (ml)
A	18
B	13
C	23
D	8

Based on the results of his investigation, which soil should Batisa choose to grow a mangrove plant?

- (1) A
- (2) B
- (3) C
- (4) D

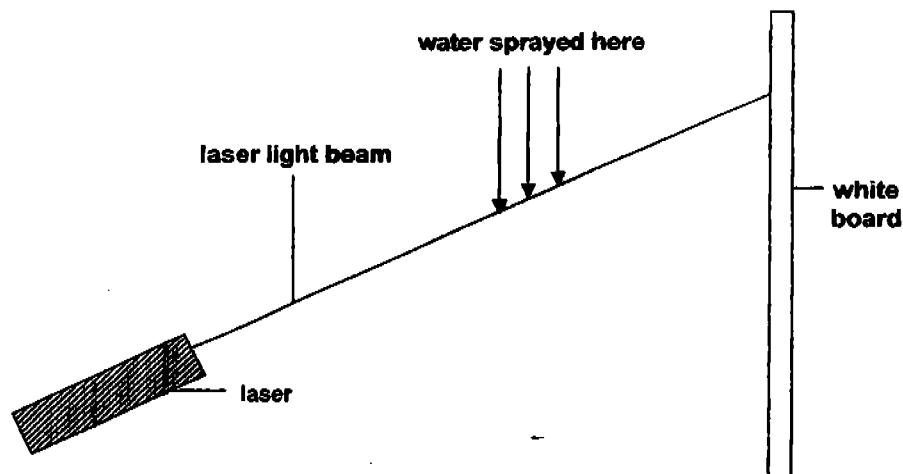
- 2 The diagram shows the positions of four different objects after they have been dropped into a trough of water.



Which of the following correctly matches the objects used?

	A	B	C	D
(1)	ping pong ball	marble	crushed aluminium foil	iron rod
(2)	ping pong ball	iron rod	crushed aluminium foil	marble
(3)	crushed aluminium foil	ping pong ball	iron rod	marble
(4)	crushed aluminium foil	iron rod	marble	ping pong ball

- 3 With the room lights off, a laser was turned on and its beam was directed towards a plain white board in a room. The presence of the light beam could not be detected as it traveled towards the white board. The laser light could only be detected at the white board, at the point where the light beam struck the white board. John then sprayed water into the air in the region where the light beam was moving. A part of the path of the light beam could then be seen.

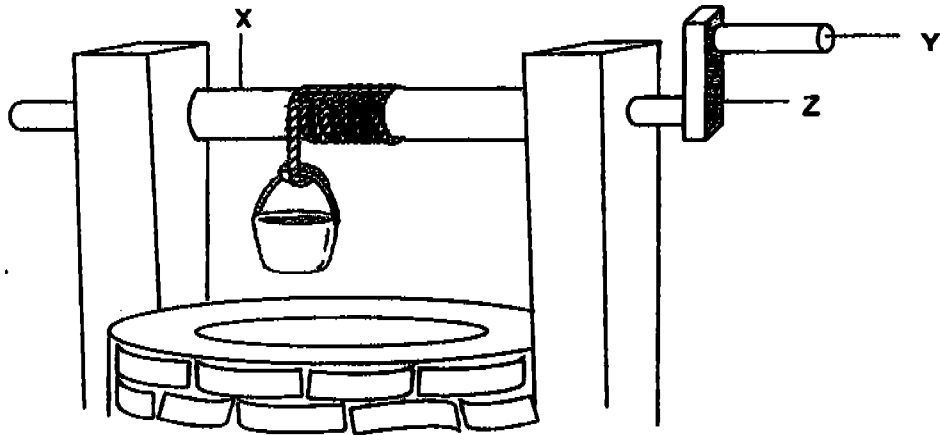


Which of the following statements best explains why the light beam could be seen only after the water was used?

- (1) The laser light beam traveled in a straight line.
- (2) The water reflected light given off by the white board.
- (3) The white board absorbed more light than the water could.
- (4) The water droplets reflected light from the laser beam to the eyes.

4

The diagram shows a simple machine that is used to draw water from a well.



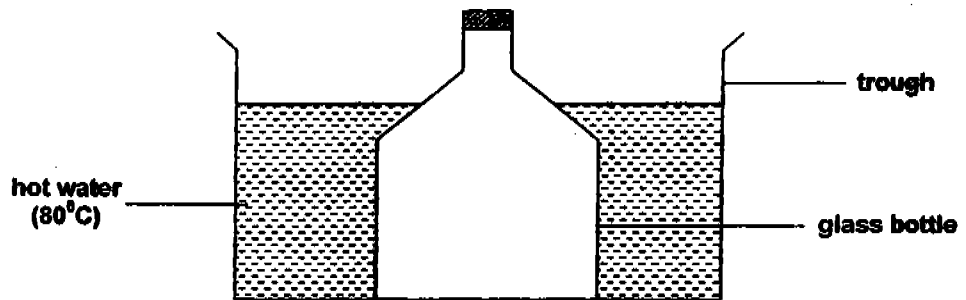
What must be done to the machine so that the least effort is required to move the load?

- A Increase the length of Y
- B Increase the length of Z
- C Decrease the diameter of X
- D Decrease the diameter of Y

- (1) A and D only
- (2) A and C only
- (3) B and C only
- (4) B and D only

5

John placed a glass bottle with a stopper into a trough of hot water as shown below.



He held down the bottle in this way for 5 minutes. Which of the following would happen during the 5 minutes?

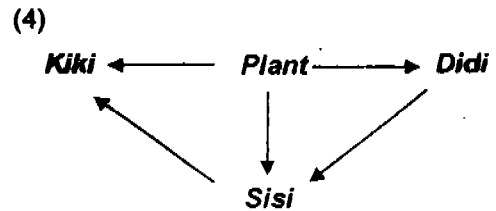
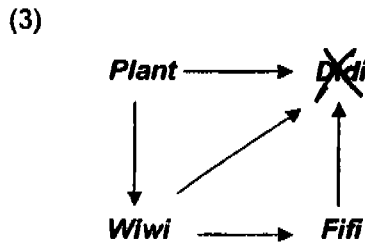
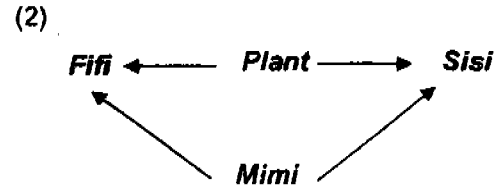
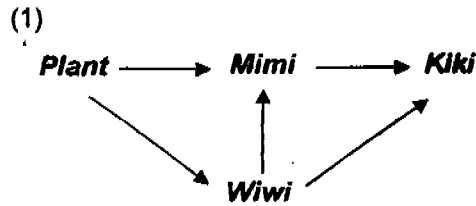
- A The water in the trough will expand.
 - B The glass bottle will expand then contract a little.
 - C The temperature of the air in the bottle will increase.
 - D The temperature of the water in the trough will increase.
- (1) A only
 - (2) C only
 - (3) B and C only
 - (4) C and D only



6 The table below groups 6 imaginary animals according to their diets.

Herbivores	Carnivores	Omnivores
Didi Wiwi	Fifi Mimi	Kiki Sisi

Which of the food webs is correct?



7 The diagram shows a money plant and a cucumber plant.



money plant

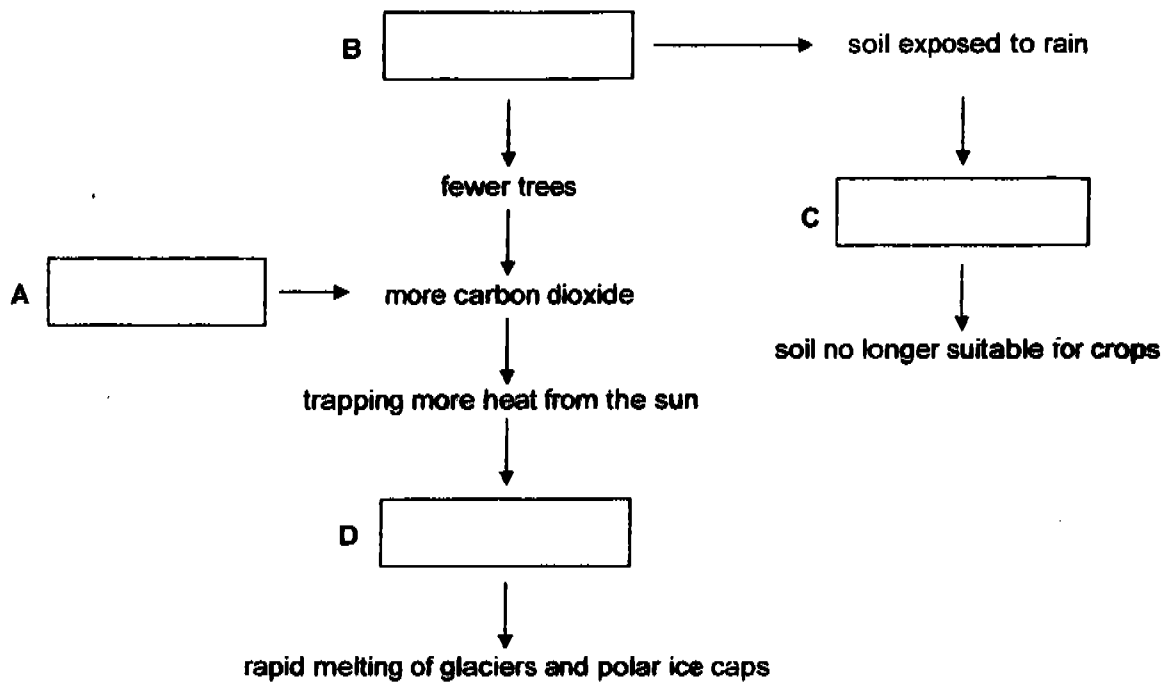


cucumber plant

Which of the following correctly describes the similarity and the difference between the money plant and cucumber plant?

	Similarity	Difference
(1)	Both are flowering plants.	The money plant has tendrils but the cucumber plant has clasping roots.
(2)	Both have weak stems.	The money plant has clasping roots but the cucumber plant has tendrils.
(3)	Both have clasping roots.	The money plant is a non-flowering plant but the cucumber plant is a flowering plant.
(4)	Both are non-flowering plants.	The money plant has a woody stem but the cucumber plant has a weak stem.

- 8 The diagram below is a representation of Man's activities which can have negative effects on the environment.



Which of the following could be A, B, C and D?

	A	B	C	D
(1)	soil erosion	deforestation	global warming	burning fossil fuel
(2)	deforestation	global warming	burning fossil fuel	soil erosion
(3)	global warming	soil erosion	deforestation	burning fossil fuel
(4)	burning fossil fuel	deforestation	soil erosion	global warming

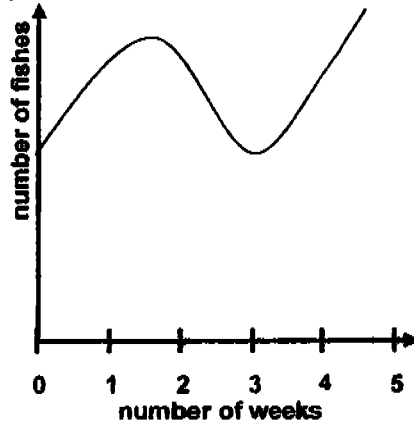
- 9 Which of the following energy sources have been correctly grouped?

	Renewable	Non-renewable
(1)	coal, wind	petroleum, running water
(2)	petroleum, running water	coal, wind
(3)	coal, petroleum	wind, running water
(4)	wind, running water	coal, petroleum

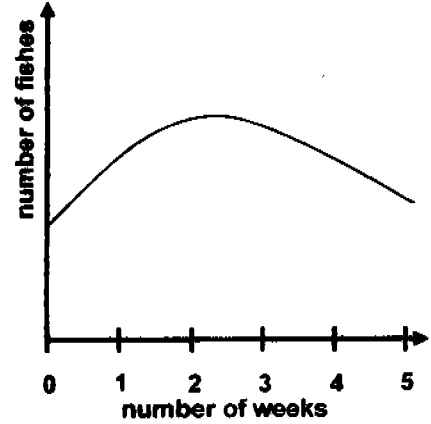
10

A factory was built on a plot of land near a river. During its first three weeks of operation, all its chemical waste was treated before being discharged into the river. Because it was too costly, all the chemical waste was dumped directly into the river without treatment for the next few weeks. Which one of the following graphs shows the effect this had on the fishes in the river?

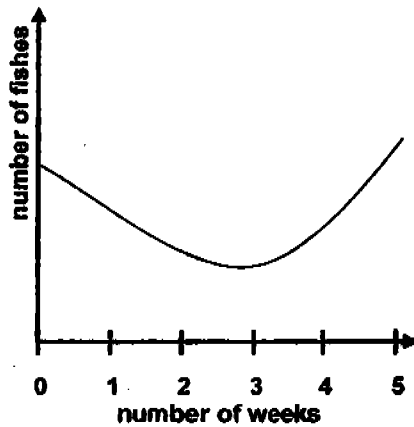
(1)



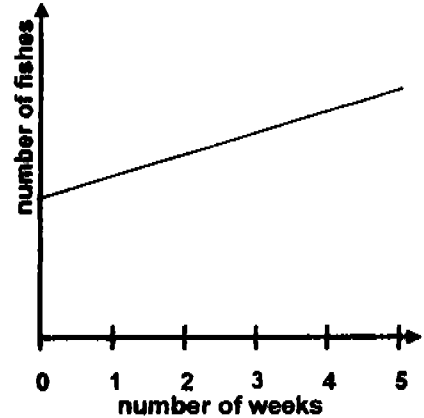
(2)



(3)

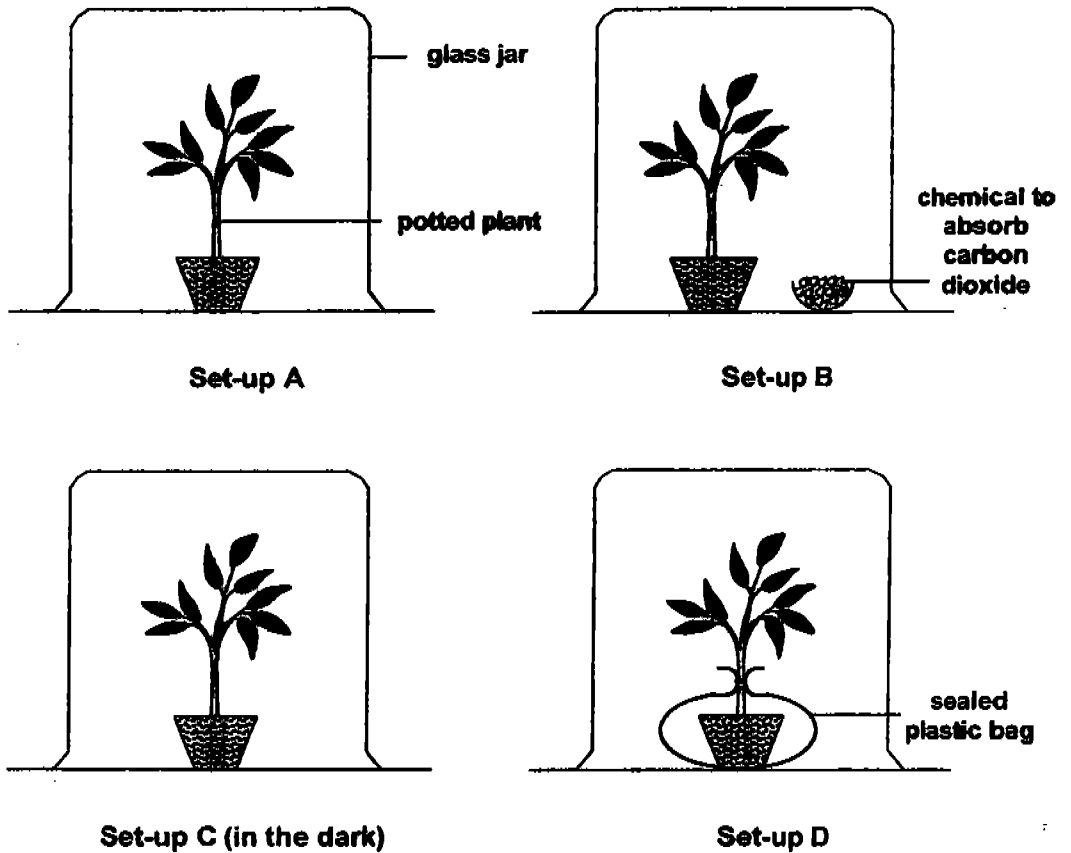


(4)



11

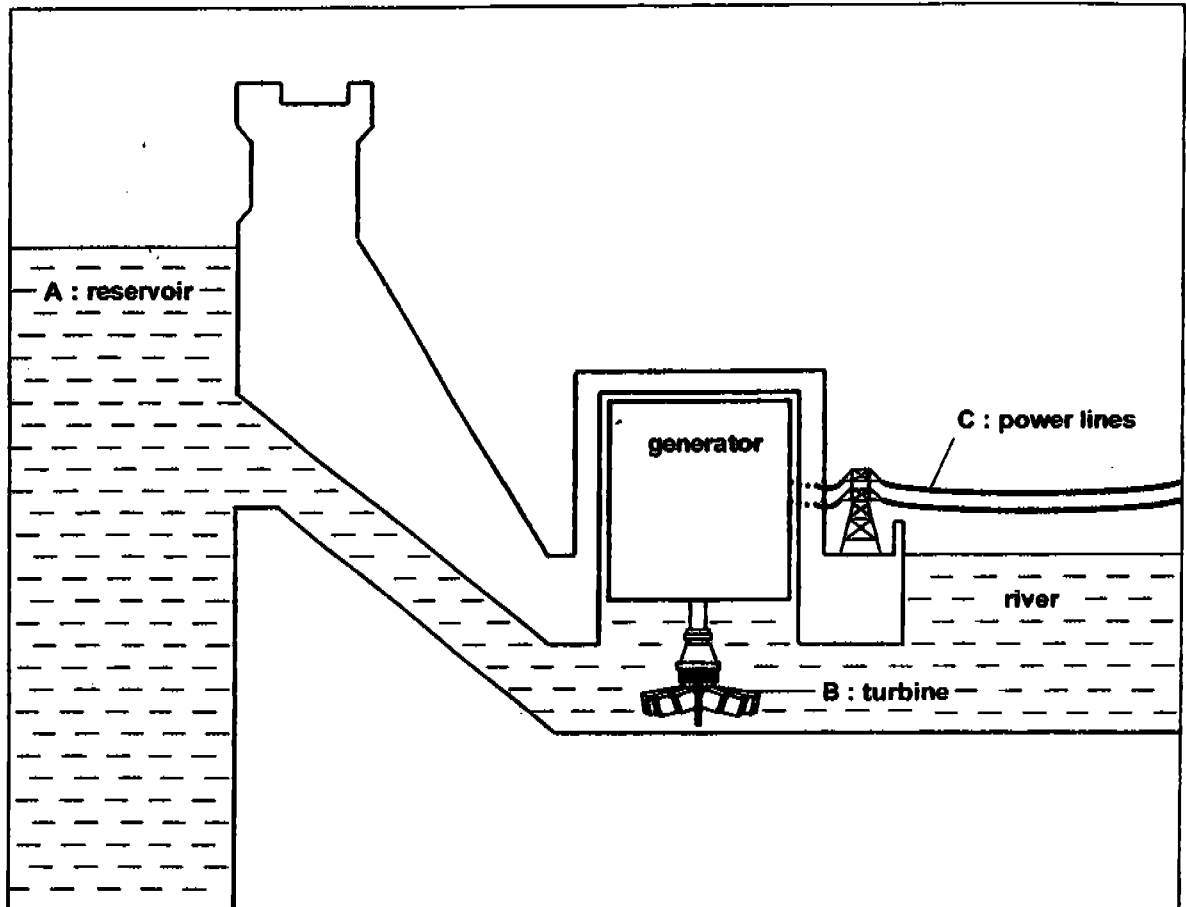
John wants to show that carbon dioxide is needed for photosynthesis to take place. He intends to carry out starch tests on some leaves to help him in this investigation. He uses 4 similar plants of similar size and sets up the investigation as shown in the diagram below. All set-ups are exposed to sunlight, except set-up C which is in the dark.



Which set-ups should he use to make a valid conclusion?

- (1) A and B only
- (2) A and C only
- (3) C and D only
- (4) All 4 set-ups

12 The diagram shows a hydroelectric power station.



Which of the following best describes the energy changes that take place from part A to part B to part C as shown in the diagram?

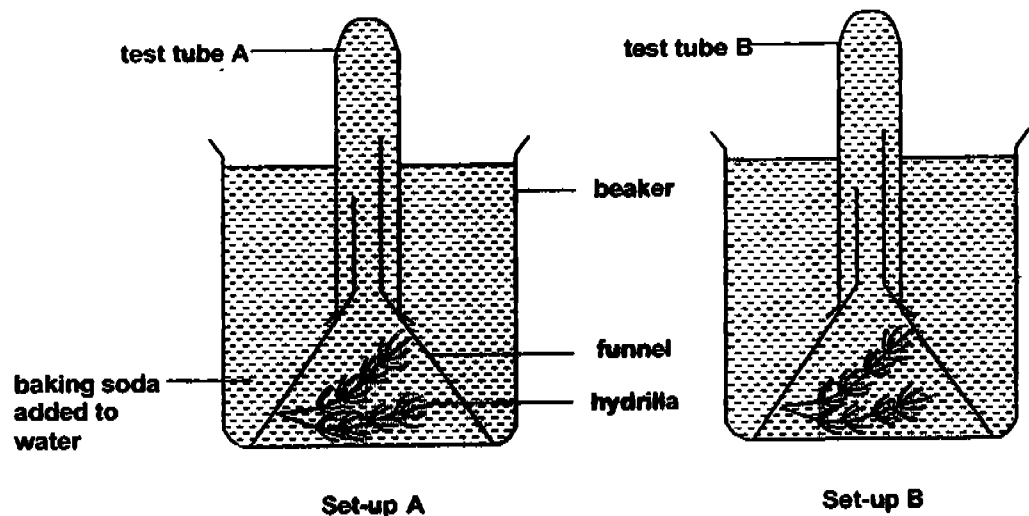
- (1) chemical energy → kinetic energy → electrical energy
- (2) potential energy → kinetic energy → electrical energy
- (3) potential energy → electrical energy → kinetic energy
- (4) kinetic energy → electrical energy → chemical energy

- 13 The table below shows the length of a spring when different weights were hung on it.

Weight (g)	Length of spring (cm)
20	8
60	10
120	13
160	15

What is the original length of the spring?

- (1) 4 cm
(2) 5 cm
(3) 6 cm
(4) 7 cm
- 14 Alice wanted to find out how the amount of carbon dioxide affected the rate of photosynthesis. She knew that when baking soda is added to water, the carbon dioxide in the water increases. She set up two experiments as shown in the diagram below. She placed both set-ups in a place where there was sunlight. After 9 hours, she recorded her observations.



She noted that there was more oxygen collected in test tube A. What conclusion could she make from this experiment?

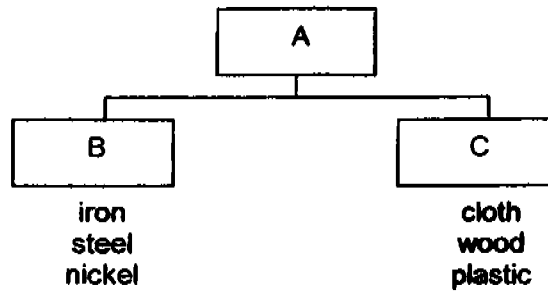
- (1) Sunlight is required by the plant for photosynthesis.
(2) Baking soda is required for photosynthesis to take place.
(3) Carbon dioxide is required by the plant for photosynthesis.
(4) The rate of photosynthesis increases when there is more carbon dioxide.

15 Ben was able to arrange 3 magnets as shown below.



Which one of the following is another possible arrangement?

<p>(1)</p> <p>Diagram (1) shows a vertical bar with B on top and A on bottom, a horizontal bar with C and D, and a vertical bar with F on top and E on bottom.</p>	<p>(2)</p> <p>Diagram (2) shows a horizontal bar with E and F, a vertical bar with V on top and B on bottom, and a horizontal bar with C and D.</p>
<p>(3)</p> <p>Diagram (3) shows a vertical bar with F on top and E on bottom, a horizontal bar with C and D, and a horizontal bar with A and B.</p>	<p>(4)</p> <p>Diagram (4) shows a horizontal bar with C and D, a vertical bar with F on top and E on bottom, and a horizontal bar with A and B.</p>



Look at the classification chart above, which of the following headings best describe A, B and C?

	A	B	C
(1)	Metals	Magnetic	Non-magnetic
(2)	Metals	Conductor of electricity	Insulator of electricity
(3)	Matter	Man Made	Natural
(4)	Matter	Good conductor of heat	Insulator of heat

- 17 A few strips of materials each measuring 3cm wide, 30 cm long and 2mm in thickness were put through a series of tests. The table below shows the aims of 3 different tests performed on them.

Tests	
A	To find out how much force is needed to break the strip of material.
B	To find out how deep the scratch mark is when a nail is used to scratch it.
C	To find out how much force is needed to lift one end of the strip off the table top by 2 cm when the middle of the strip is fixed to a table.

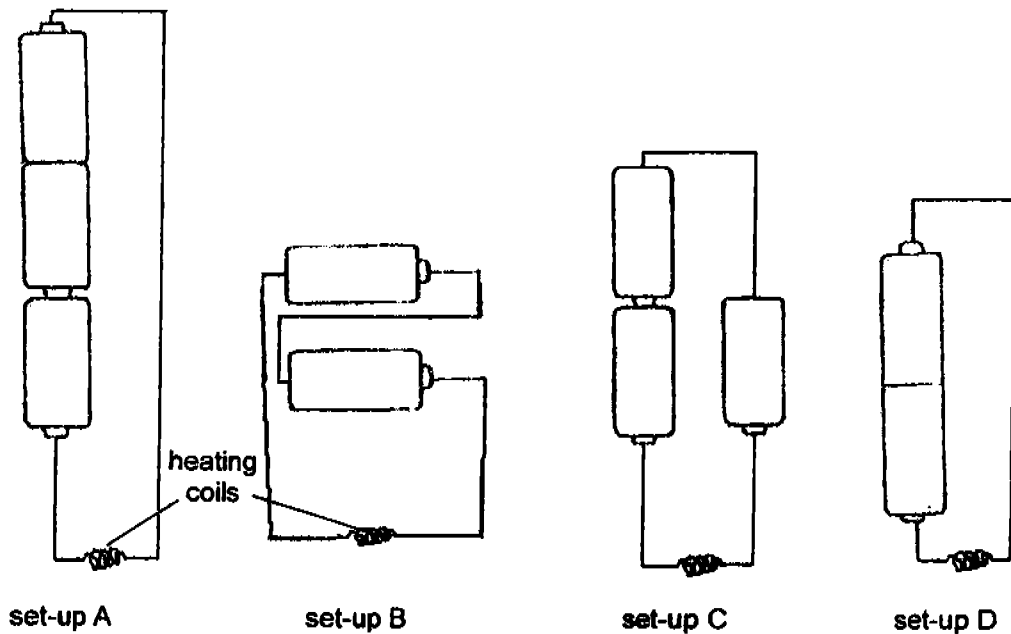
Which of the above tests can be used to find out the material that is the hardest?

- (1) A only
- (2) B only
- (3) B and C only
- (4) A, B and C

- 18 Even though the Venus fly trap has the ability to trap insects, John wants to prove that it is still a food producer. The table below describes 4 different sets of plants that John can choose from for his experiment. Which 2 pots of Venus fly trap plants below should John choose to carry out a starch test?

	Pot A	Pot B
(1)	Plant in sealed transparent plastic container without flies	Plant in sealed transparent plastic container with flies
(2)	Plant in sealed wooden container	Plant in sealed glass container
(3)	Plant watered everyday	Plant watered every 3 days
(4)	Plant with fertilizer	Plant without fertilizer

- 19 In the set-ups below, similar types of batteries and heating coils were used. The set-ups were then immersed in 4 similar basins of tap water. The time taken for the temperature of the water to increase by 10°C was recorded.

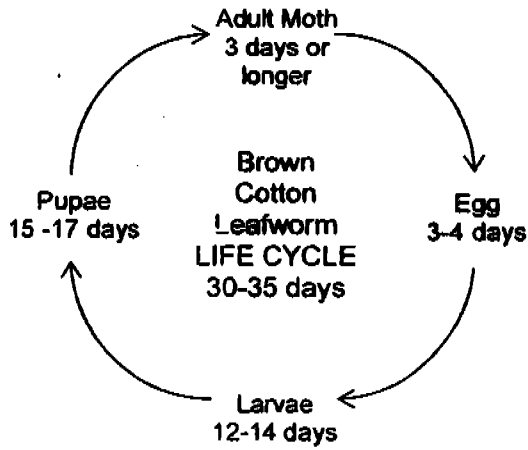


Given that the rate at which the water heats up depends on the strength of the electrical current, in which of the above set-ups will the water in the basins heat up at the same rate?

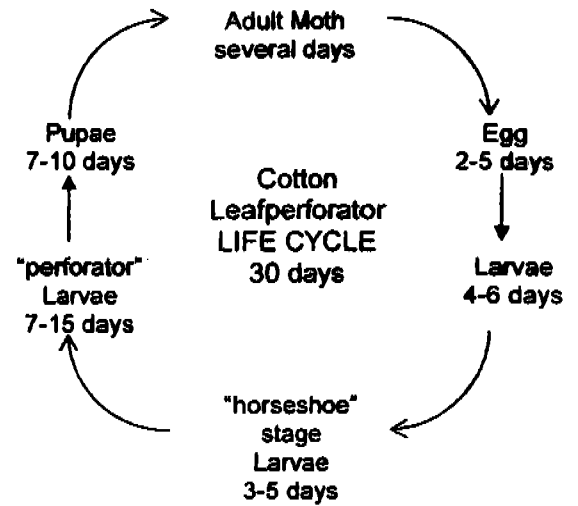
- (1) A only
- (2) A and C only
- (3) B and D only
- (4) A, B and C only

20 The diagrams below show the life cycles of 4 different types of insects that feed on cotton plants. From the information given in the diagrams, which of these insects is the least destructive to the cotton plants?

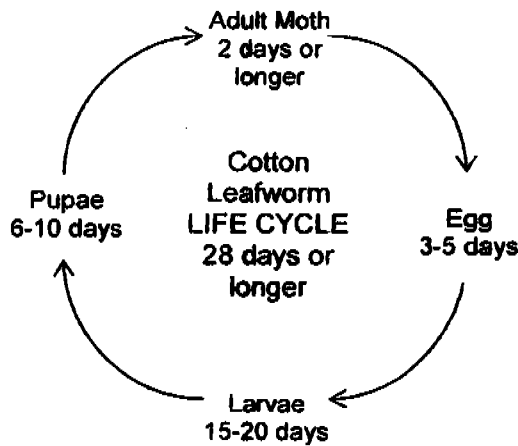
(1)



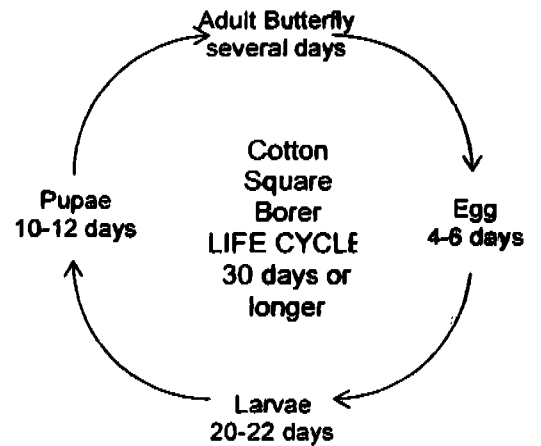
(2)



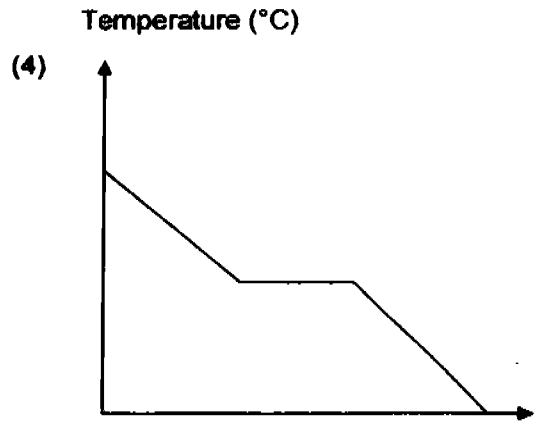
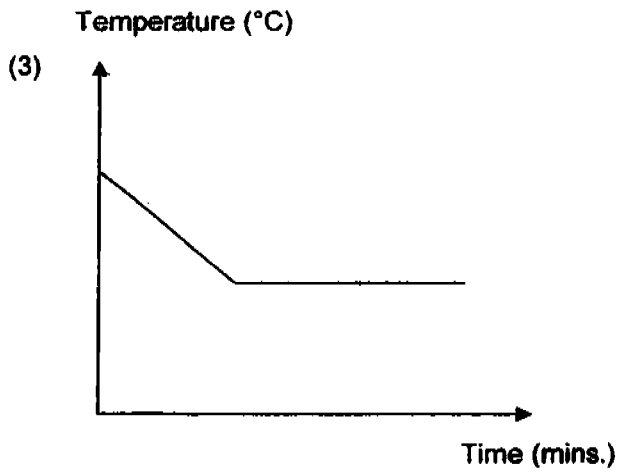
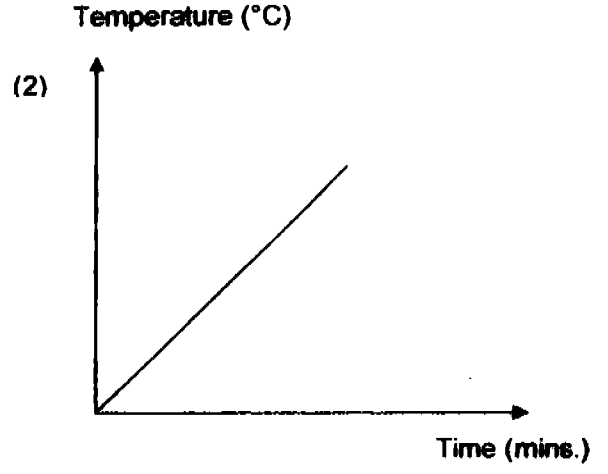
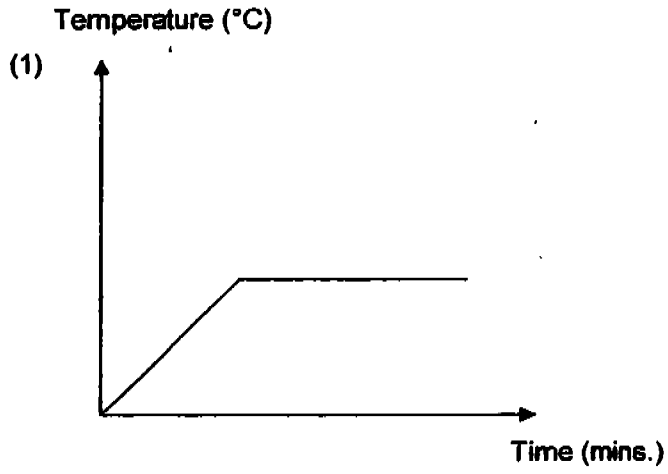
(3)



(4)



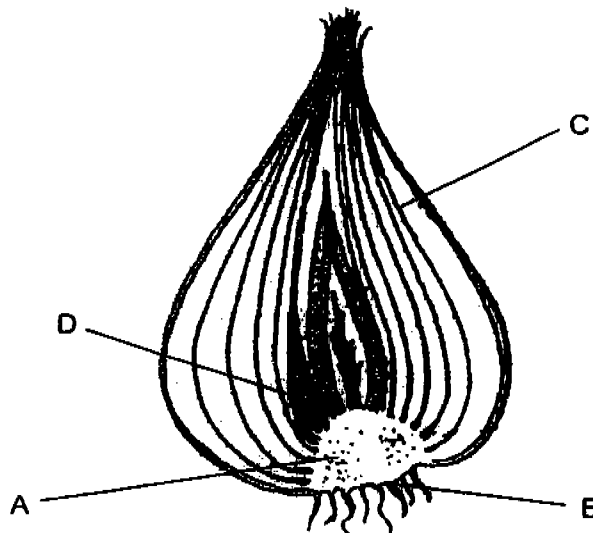
21 Some cubes of ice were added to a glass of hot water which was left in a room, and its temperature was monitored over a period of time. Which of the following graphs best shows the temperature of the water in the glass over a period of time?



- 22 The table below lists the melting and boiling point of some substances. Based on the table, which of the substances below is a solid at room temperature?

	Substances	Melting point	Boiling point
(1)	A	-25°C	125°C
(2)	B	-207°C	-12°C
(3)	C	16°C	88°C
(4)	D	36°C	194°C

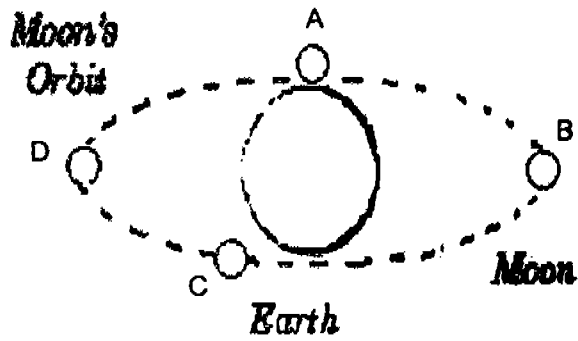
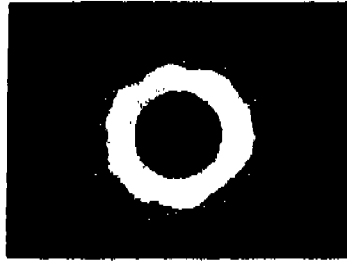
- 23 The diagram below shows the bulb of an onion.



From which of the above parts will a new onion plant grow?

- (1) A
- (2) B
- (3) C
- (4) D

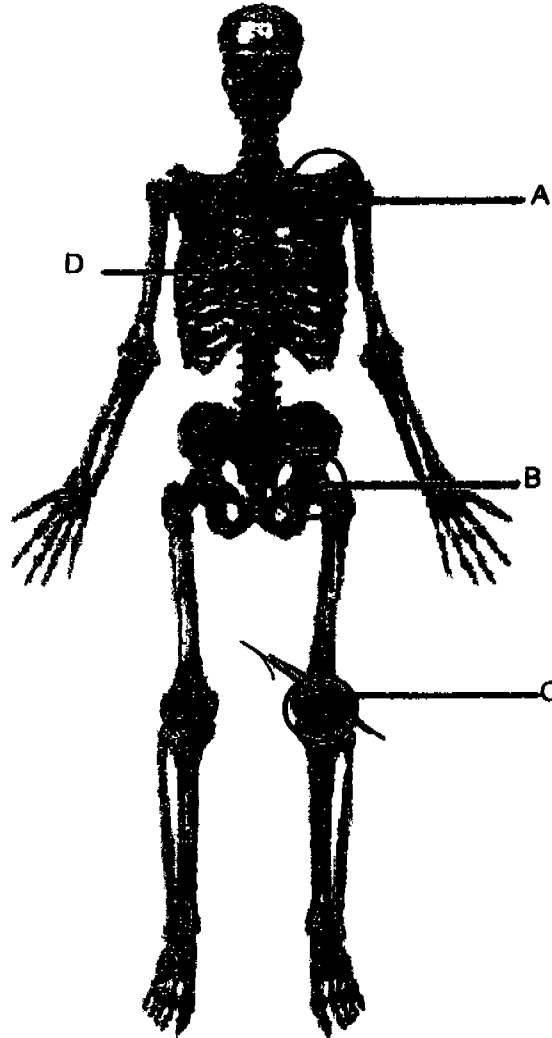
- 24 The photo below shows how the sun appears in the sky on a particular day. This phenomenon is called the eclipse of the sun.



At which point A, B, C or D would the moon most likely be during this time?

- (1) A
- (2) B
- (3) C
- (4) D

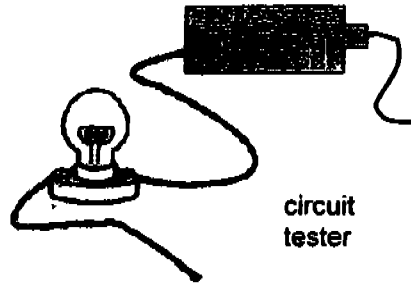
- 25 The diagram below shows the human skeletal system with joints labeled A, B, C and D.



Which of the joints above allow similar forms of movement?

- (1) A and B
- (2) A and C
- (3) B and C
- (4) B and D

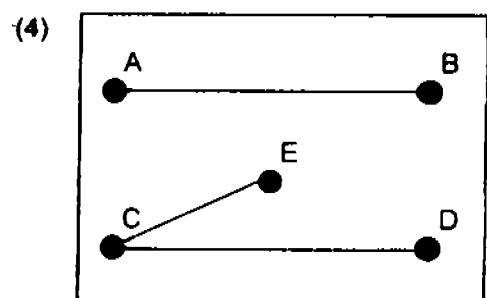
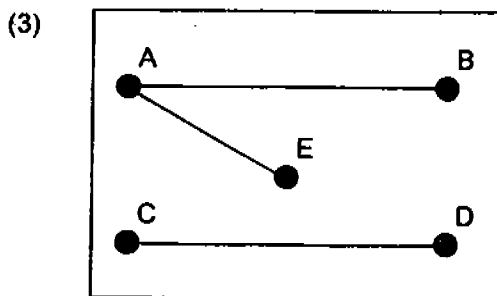
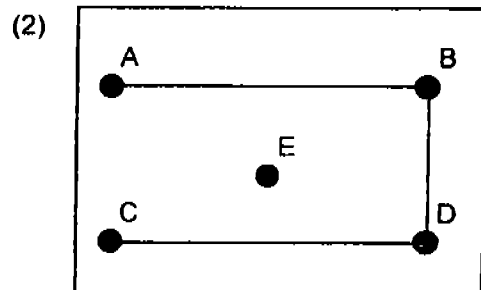
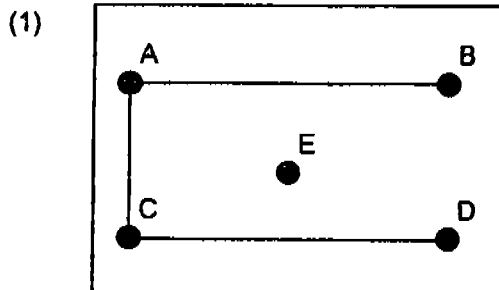
26 The diagram below shows a circuit tester.



When the circuit tester was attached to the various points on a circuit board, the following was observed.

Points connected to	Did the bulb light up?
A to B	Yes
B to C	No
C to D	Yes
E to D	No

Which of the following circuit boards was being tested?



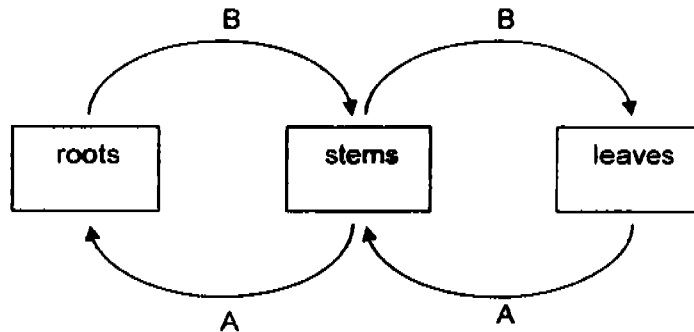
- 27 The table below shows the amount of gases in 1000 cm³ of air exhaled by a 12 year old boy when he is sleeping.

Volume of gases (cm ³)		
oxygen	carbon dioxide	other gases
174 cm ³	40 cm ³	786 cm ³

Which of the following is most likely to be the amount of gases in 1000 cm³ of air exhaled by the same boy when he is cycling?

	Volume of gases (cm ³)		
	oxygen	carbon dioxide	other gases
(1)	174	30	582
(2)	214	70	502
(3)	174	40	786
(4)	123	91	786

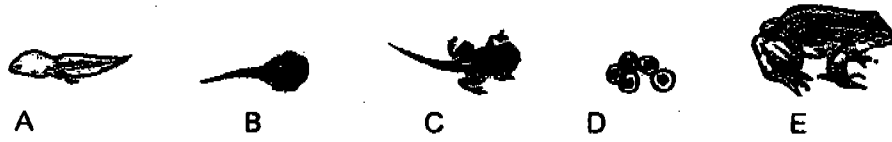
- 28 The diagram shows how 2 substances, A and B, are transported in a plant.



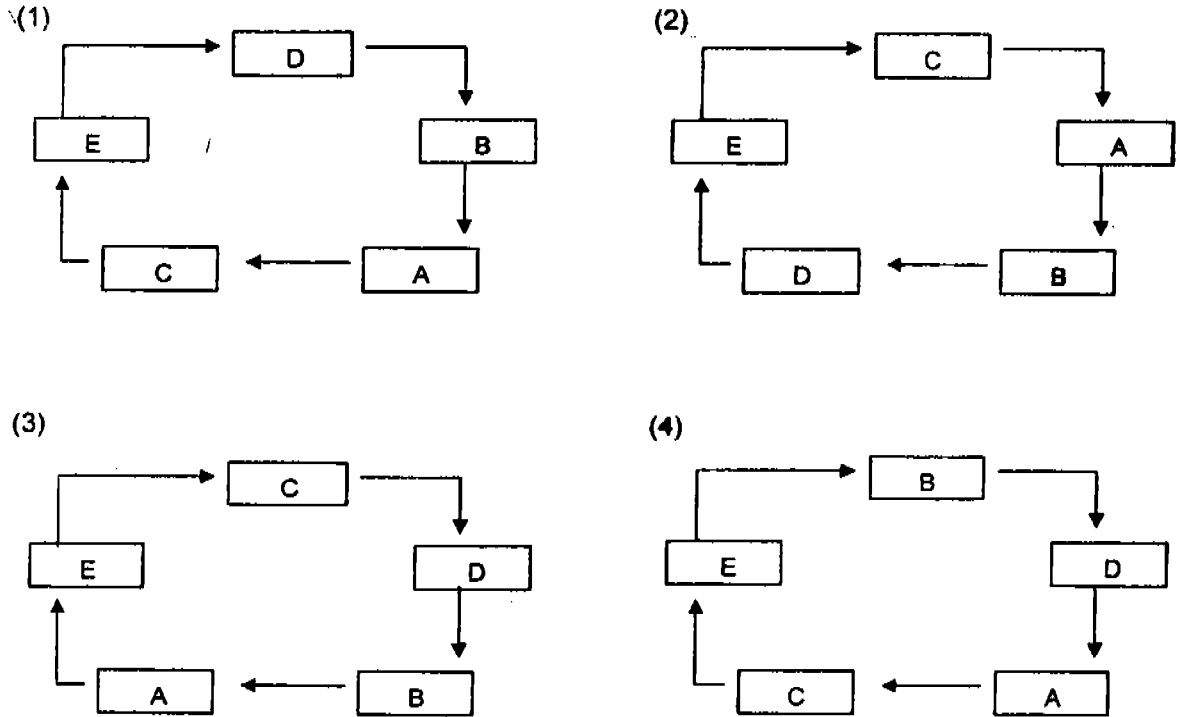
Based on the diagram, what are substances A and B?

	A	B
(1)	water	nutrients
(2)	water	sugar
(3)	mineral salts	water
(4)	sugar	mineral salts

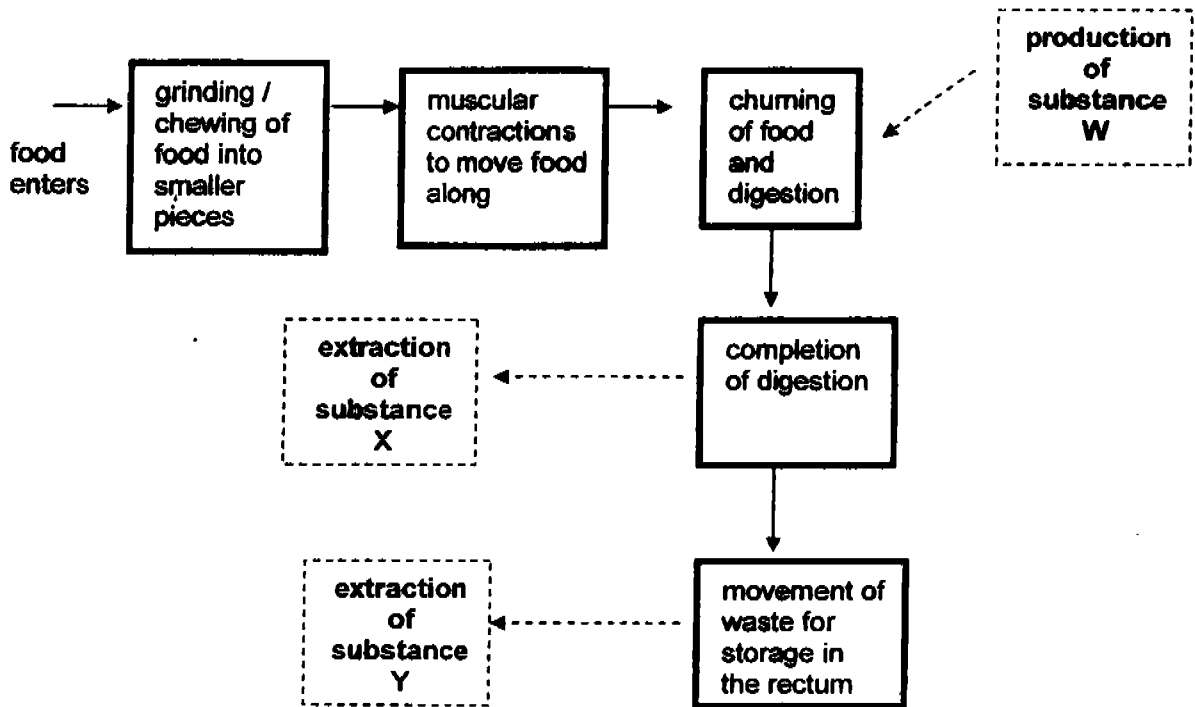
29 The diagram below shows the various stages of a frog's life cycle.



Which of the following correctly shows the stages in its life cycle?



30 The flow chart below shows the processes involved in the human digestive system.



Based on the information above, what are substances W, X, and Y respectively?

	W	X	Y
(1)	saliva	water	nutrients
(2)	saliva	nutrients	water
(3)	digestive juice	water	nutrients
(4)	digestive juice	nutrients	water

Index No.

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ANGLO-CHINESE SCHOOL (JUNIOR)
ANGLO-CHINESE SCHOOL (PRIMARY)

PSLE PRELIMINARY EXAMINATION 2005

SCIENCE
BOOKLET B

NAME : _____ () CLASS : P6. _____

DATE : 25th August 2005

Total Time For Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all questions.

	Maximum Possible Marks	Actual Marks
Q1 to 30	60	
Q31	2	
Q32	2	
Q33	2	
Q34	3	
Q35	3	
Q36	3	
Q37	3	
Q38	2	
Q39	3	
Q40 and Q41	4	
Q42	2	
Q43	4	
Q44	3	
Q45	2	
Q46	2	
Total	100	

Signature

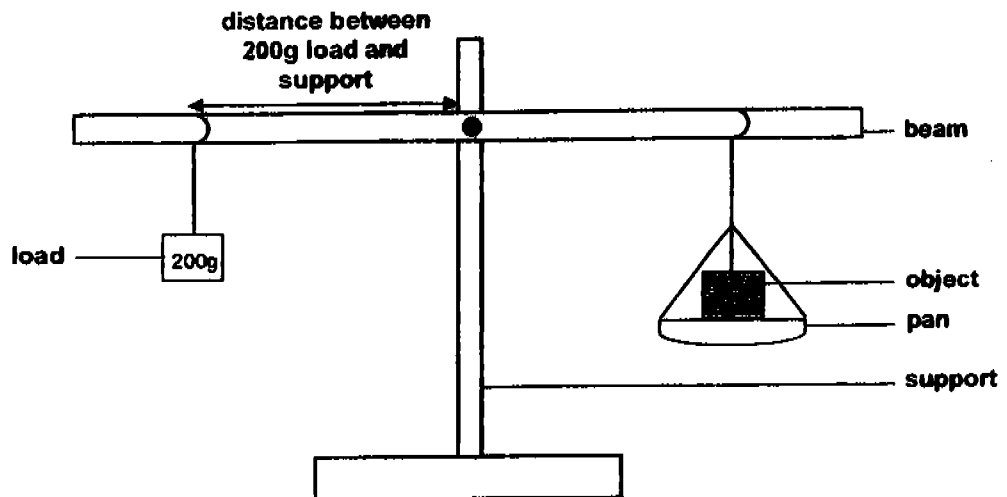
Date

PART II

For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part question. (40 marks)

- 31 The diagram shows a lever balance with a 200g load that can slide along the beam on one side to balance an object placed in a pan on the other side.



Michael used the load of 200g to balance some objects placed in the pan. Each time, he had to move the 200g load along the beam. He measured the distance between the 200g load and the support and recorded them in the table below. He also recorded the mass of each object.

- (a) Complete the table below. [1]

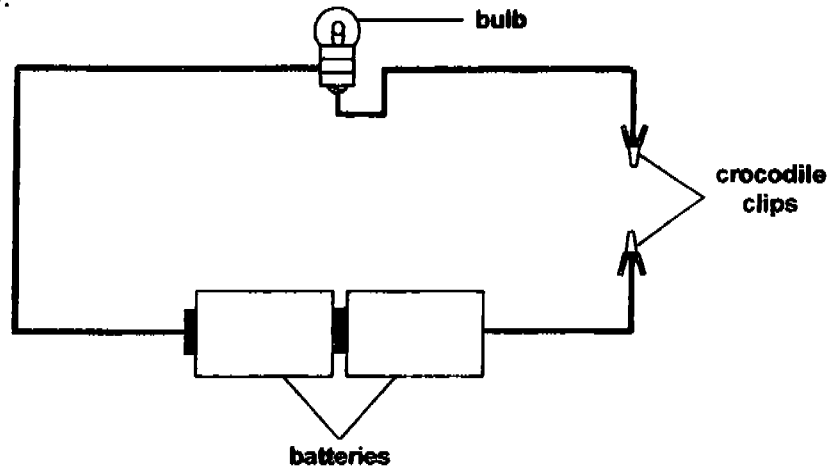
Mass of objects (g)	50	100	150	200	300
Distance between 200g load and support (cm)		8	12		25

- (b) State the relationship between the mass of the object and the distance between the 200g load and the support. [1]

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SCORE	2
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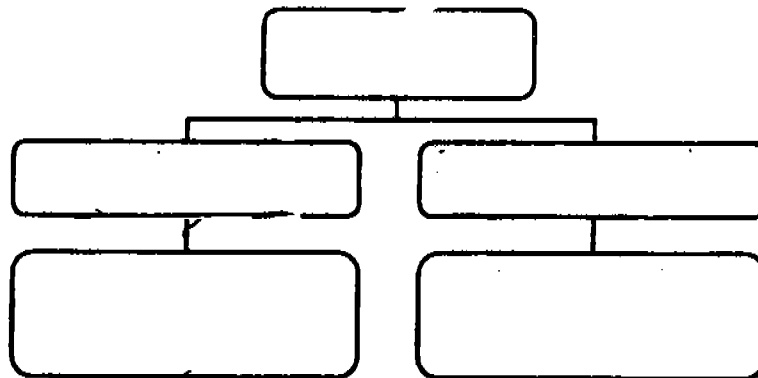
- 32 Wilson made the circuit tester shown below to test if some materials are conductors of electricity.



He used the materials, one at a time, to close the circuit and recorded the results in the table below.

Material	Did the bulb light up?
A	No
B	Yes
C	Yes
D	No

- (a) Use the information from the table to complete the classification chart below. Write a suitable heading, sub-headings and the letters A, B, C and D in the boxes provided. [1]

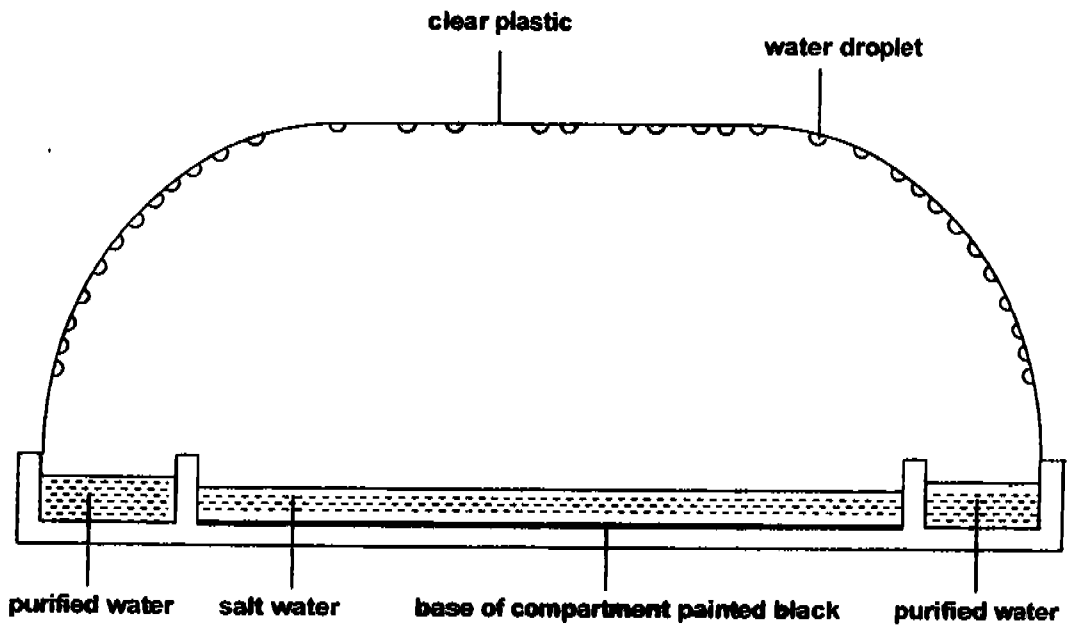


- (b) Wilson then used object X to close the circuit. He observed that the bulb lit up very brightly and then fused. What could object X be? [1]

(Go on to the next page)

SCORE	2
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33 The diagram shows a model of a solar still which is used to purify salt water.



(a) Suggest a reason for painting the base of the compartment containing the salt water black. [1]

(b) What would be the effect if there is an increase in the temperature of the salt water? [1]




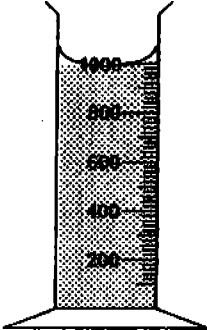
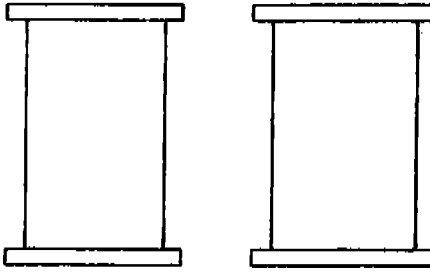
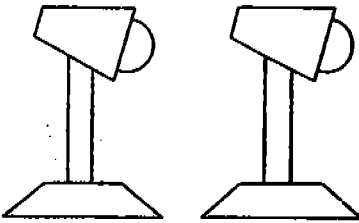
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B - 3

SCORE	2
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- 34 Susan wanted to test her hypothesis that the presence of water plants increases the survival rate of water snails.

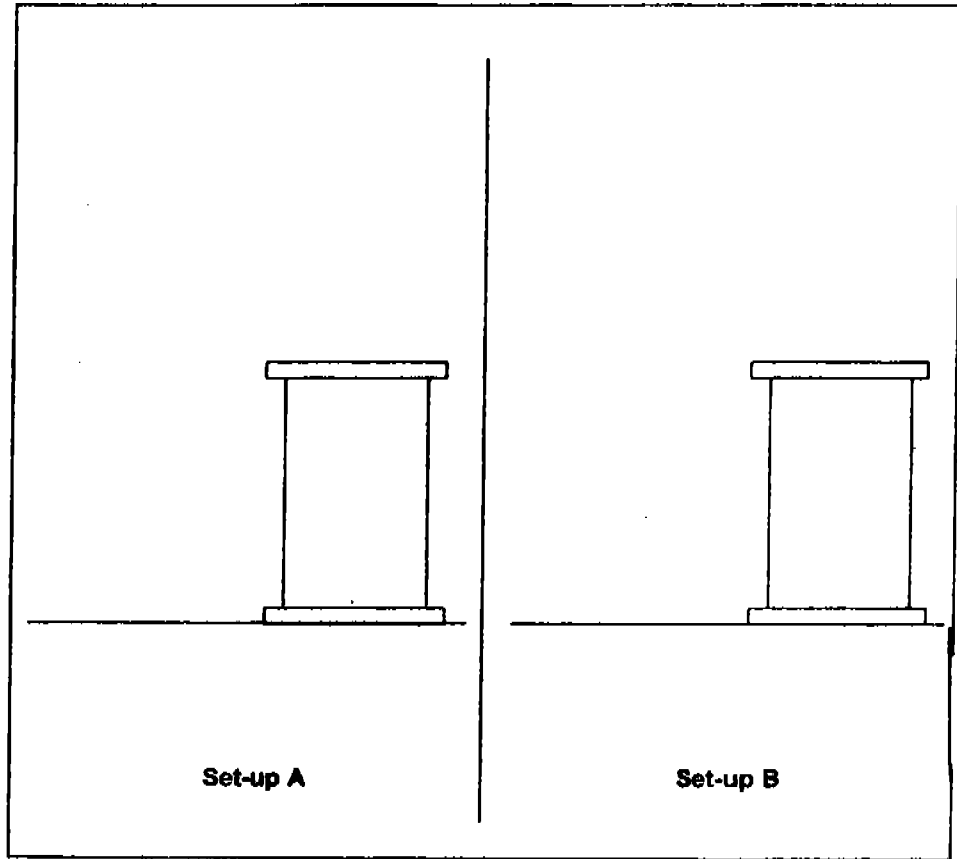
She was given the following items.

	4 snails
	4 fishes
	2 strands of hydrilla
	1 litre of water
	2 air-tight glass jars
	2 table lamps

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- (a) Susan needs to prepare two set-ups to conduct a fair test. Complete the drawings below to show the set-ups that she should prepare. (You need not use all the items provided.)

[2]



- (b) What observation would prove that Susan's hypothesis is true?

[1]

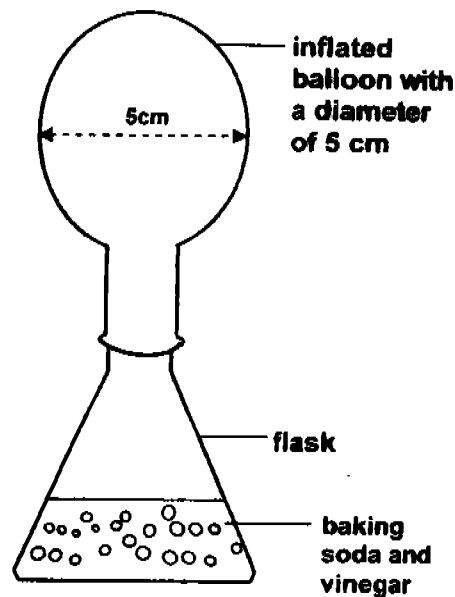
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SCORE	3
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B - 5

- 35 Mark knew that vinegar reacts with baking soda to produce a gas. He wanted to investigate whether changing the temperature of vinegar would affect the rate of reaction in the mixture. The gas produced in the reaction was collected in a balloon. He recorded the results in the table below.

Flask	Temperature of vinegar (°C)	Time taken (s)	Diameter of inflated balloon (cm)
A	15	35	5
B	25	18	5
C	5	70	5



- (a) If Mark used 3 g of baking soda and 15 ml of vinegar in flask A, what should be the amount of both substances in flask C? [1]

Amount of vinegar _____ ml

Amount of baking soda _____ g

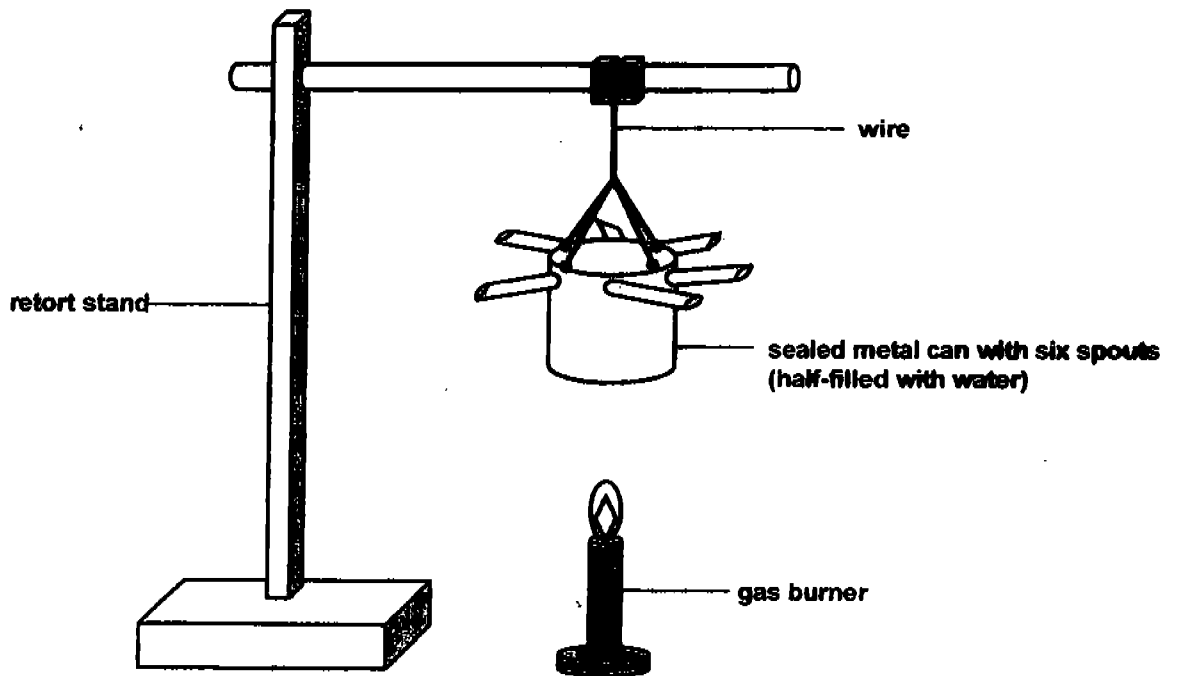
- (b) Why was the diameter of each of the inflated balloons kept the same? [1]

- (c) What conclusion can be made about the temperature and the time taken for the reaction? [1]

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SCORE	3
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- 36 John wanted to illustrate that one form of energy can be changed into another form. He set up the apparatus as shown below and heated up the water in the can until the water boiled.



- (a) It was observed that the metal can started spinning. Explain why. [1]

- (b) What could be seen coming out from the spouts of the metal can? [1]

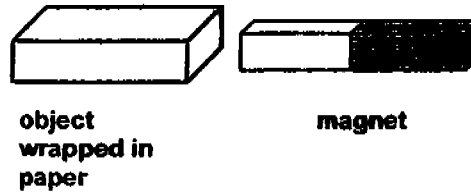
- (c) Without doing anything to the metal can, what can be done to make the metal can spin faster? [1]

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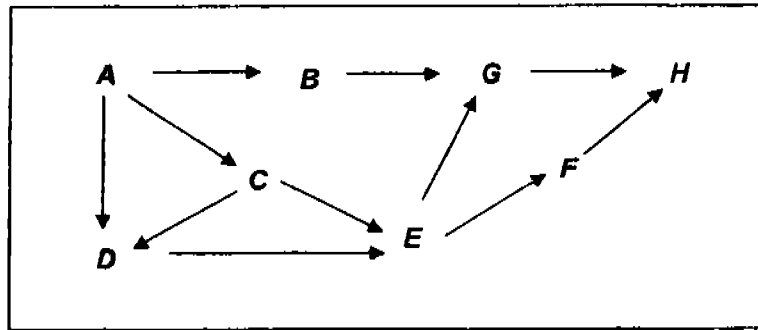
SCORE	3
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B - 7

- 37 Gary was given three objects wrapped similarly in paper. The objects were of similar size. He held a magnet about one centimetre away from each one of them as shown in the diagram and recorded his observations in the table below.



38 Refer to the food web below and answer the questions.



(a) (i) Which organism is a plant? [½]

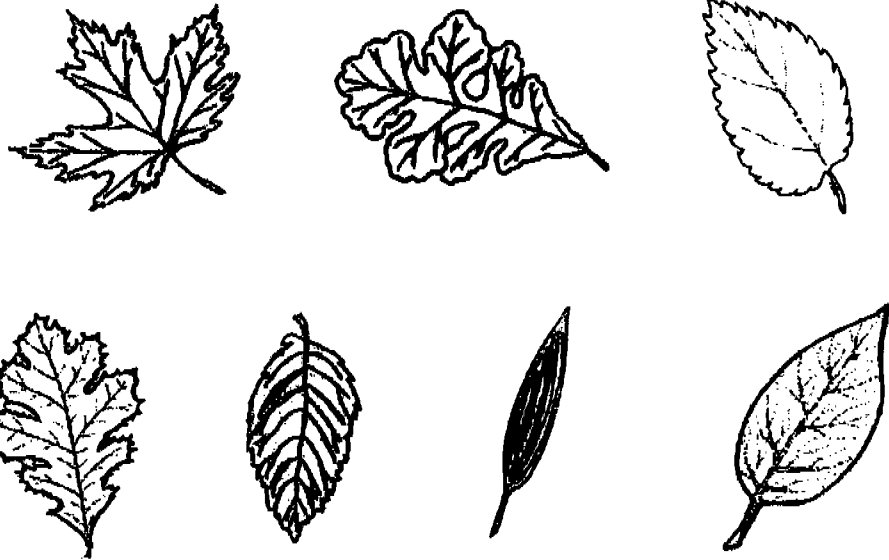
(ii) Which organism is a predator only? [½]

(b) What will eventually happen to organism H if a disaster destroyed most of organism A? Why? [1]

(Go on to the next page)

SCORE	2
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39 The diagrams below show various leaves.



Study each of the following groupings, state the characteristic observed that is used to group them in the boxes provided. [3]



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SCORE	3
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B - 10

- 40 A pot of soil was left on a window ledge after the plant that was growing in it had died. Over a period of time, some organisms began to grow in it. Though they were not green in colour, they looked like plants.

Below is an outline of an experiment that can be conducted to find out if this organism is a plant.

Step 1: Fill two pots with soil.

Step 2: Transfer an equal amount of organism into each pot.

Step 3: Leave one pot in the cupboard, the other on the window ledge.

Step 4: Water each pot everyday.

Step 5: Observe the growth of the organisms in each pot for 3 weeks.

Step 6: Draw a conclusion.

- (a) If the organisms in both pots are growing well after 3 weeks, what can you conclude? [1]

- (b) Give a reason for your answer in (a) above. [1]

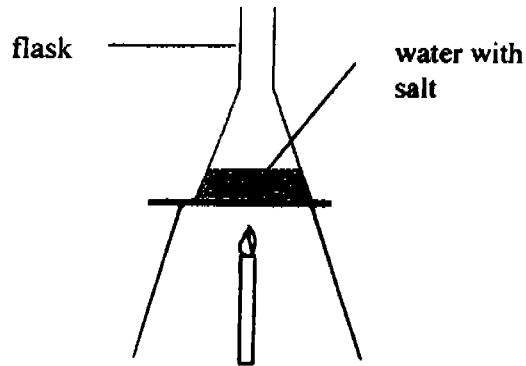
- 41 When matter interacts with different intensity of heat, they can go through changes in their states. All matter _____ when heated. When heat is absorbed, a matter increases in temperature and can _____ to become a liquid or _____ to turn into a gas. When matter loses heat, they can either contract, condense or become a _____. These changes in states are often reversible. [2]

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SCORE	4
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B - 11

- 42 Peter wants to find out how the amount of salt affects the boiling point of water. He set up his experiment as shown below using several flasks, water, candles and some salt.



The details of his experiment are recorded in the table below.

	Flask A	Flask B	Flask C	Flask D	Flask E
Amount of water at the start of his experiment	100ml	100ml	100ml	100ml	200ml
Amount of salt in each flask	0g	5g	15g	20g	0g
Size of flask	500ml	500ml	1000ml	500ml	1000ml
Time taken for the water to boil	5mins	10mins	10mins	20mins	6mins
Temperature at which water boils	100°C	101°C	102°C	104°C	100°C
Amount of water at the end of the experiment	80ml	65ml	65ml	50ml	80ml

- (a) If Peter were to draw a conclusion from his experiment, which set-ups should Peter use for this purpose? [1]

- (b) Name another variable that must be kept constant for this test to be a fair one. Do not mention any of those stated above. [1]

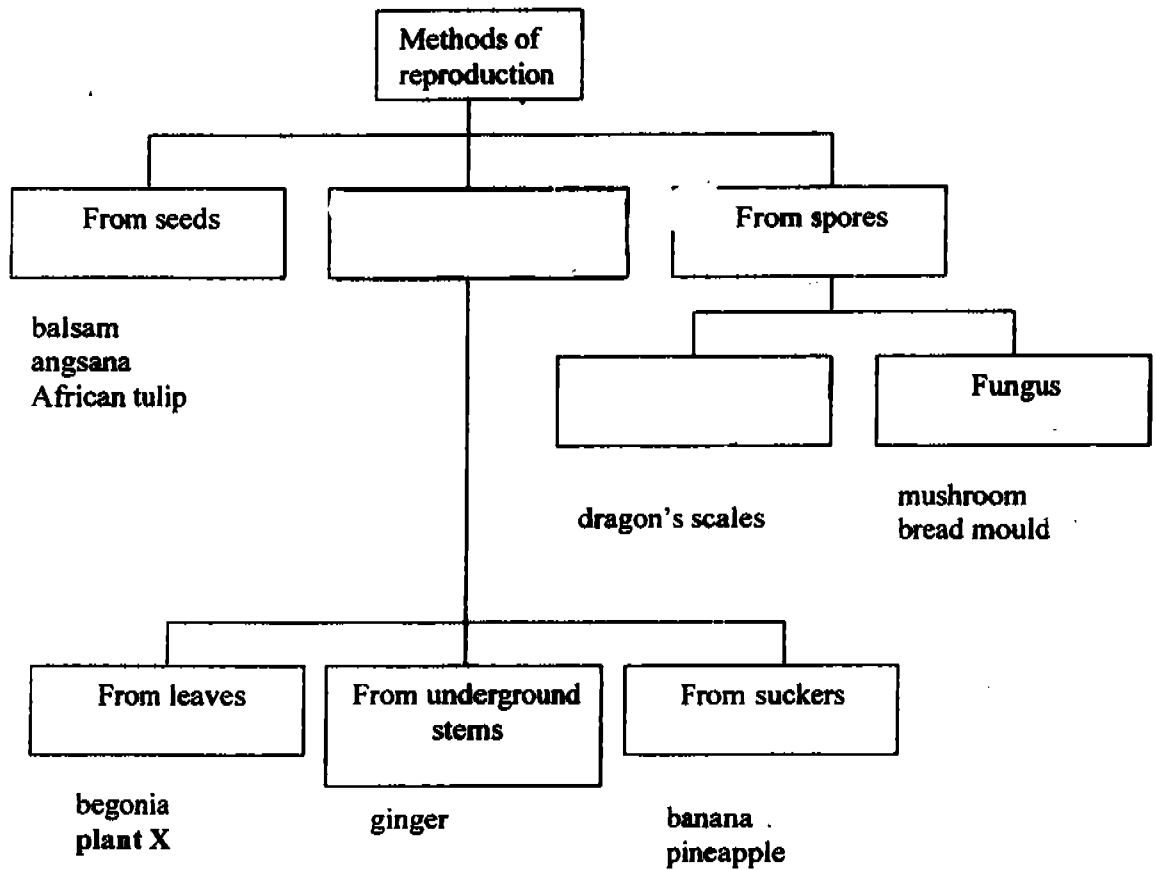
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SCORE	2
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43 John drew up the chart below to classify plants based on their methods of reproduction.

(a) Complete the chart by filling in the empty boxes.

[2]



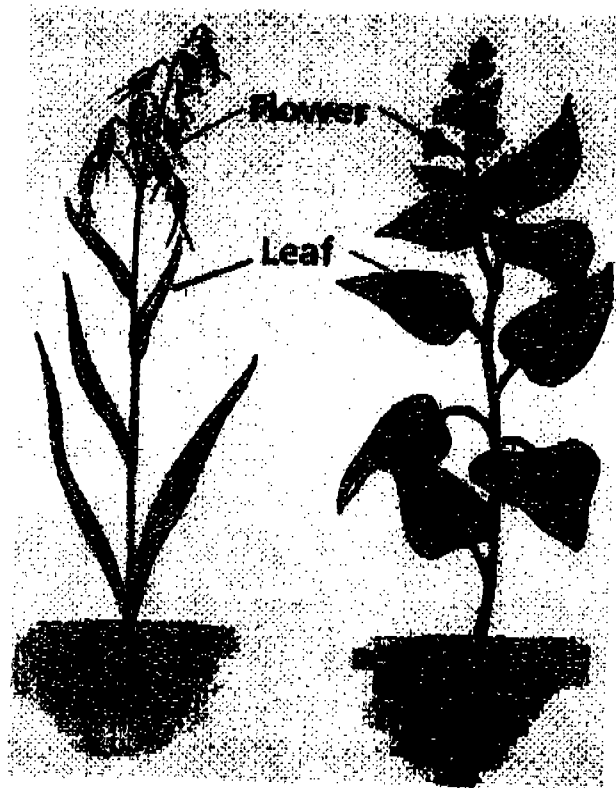
(b) He is told that there is an error in his chart. What is the error John has made and why? [1]

(c) What can plant X be? [1]

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SCORE	4
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44 The diagram below shows 2 different plants.



Plant A

Plant B

(a) Based on the diagrams above, state two differences in the roots of both plants. [1]

(b) Given that plant A's roots had been attacked by parasites, explain how this will affect the function of the roots and eventually the growth of the plant. [2]

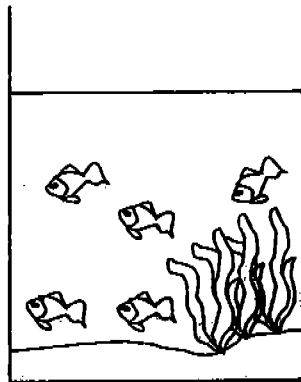
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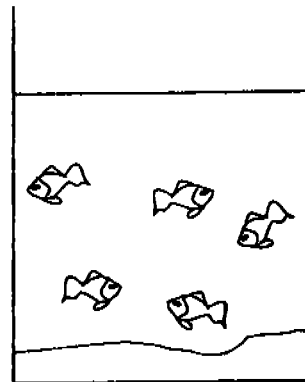
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Jonah set up 2 similar aquariums, one with water plants, the other without. For each tank, he observed the section of the tank where the fish tend to swim in. He did a sketch of his observation as shown below.

Observation made a day after setting up the tank

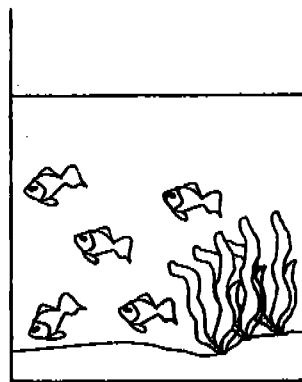


Tank A

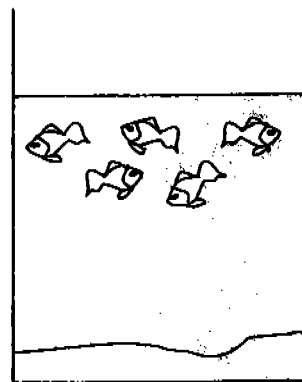


Tank B

Observation made 5 days after setting up the tank



Tank A

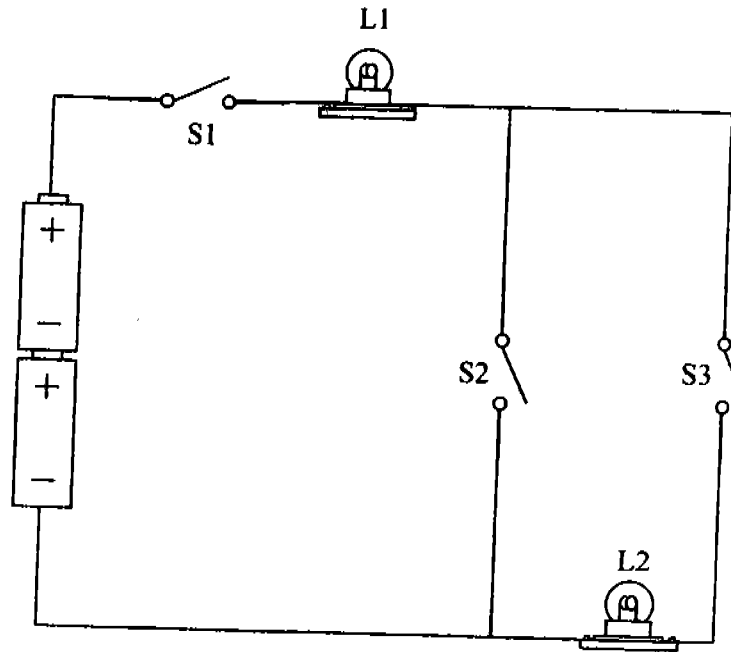


Tank B

- (a) Based on his observations over this period of time, explain why the fish in the two tanks swam in similar sections of the tank on the first day the tanks were set up?

- (b) Explain why the fish in the two tanks swam in different sections of the tank a few days later? [1]

- 46 John set up the circuit below using 2 bulbs, L1 and L2, and three switches, S1, S2 and S3.



He wanted to find out which of the bulbs, L1 and L2, will light up when the switches were opened and closed. He recorded some of the data he collected in the table shown. Fill in the empty boxes to complete the table. [2]

Switches			Did the bulb light up?	
S1	S2	S3	L1	L2
	close	close	no	no
close	open		yes	yes
open	open	close		no
close	close	close	yes	

THE END

SCORE	2
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- 37) a) Object A b) It could be made of iron
 c) He used the other end of the magnet to make object B
 move towards it.
- 38) a) i) organism A ii) Organism H
 b) The population of H will decrease because when A is
 destroyed, it leads to a depletion of the food sources
 in the whole community.
- 39) Oval shaped
 Jagged-edged
 Parallel veins
- 40) a) The organisms in the pots are not plants.
 b) Plants need light to photosynthesize and make food. If
 the organisms in the pot placed in the cupboard are
 growing well, it means they are not plants because they
 do not photosynthesize.
- 41) expands
 melt
 evaorate
 solid
- 42) a) He should use set-ups A, B and D
 b) Number of candles.
- 43) a) From other plant parts
 Ferns
 b) He put fungus in the chart. Fungus are not plants.
 c) It can be the African violet.
- 44) a) The roots in plant A do not grow very deep into the soil.
 b) The roots will not be able to absorb enough nutrients
 and water for the plant, causing it not to grow well.
- 45) a) The water in both tanks was rich in dissolved oxygen
 b) The level of oxygen in tank A is more than that in tank
 b) B because the plants in tank A photosynthesized and
 gave out oxygen.
- 46) open
 close
 no